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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,313	02/28/2002	Michael D. D. Clarke	7099.1626-00	6840

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EXAMINER

NGUYEN, CUONG H

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 01/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/084,313

Applicant(s)

CLARKE ET AL.

Examiner

CUONG H. NGUYEN

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/18/05</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

### ***DETAILED ACTION***

1. This Office Action is the answer to the amendment, and the REMARKS/ ARGUMENTS received on 7/28/2005, which papers have been placed of record in the file.
2. Claims 1-40 are pending in this application. Claim 41 is canceled.

#### ***Response***

3. The current examiner respectfully submits that it is obvious with the cited prior art that limitations in the pending claims are obvious; although the cited reference use different terms (e.g., flight planning instead of "flight assignment"), they comprise the same claimed functions since cited prior art teach about flight management service (i.e., including flight planning, maintenances, routing schedules – everything that requires FMS; the examiner submits that there is no distinguishing between pre-flight assignment or proposed preflight assignment comparing to flight planning – merely claiming same functions). For claims 7-9, 21-23 the claimed information would cover non-functional material that do not distinguish claimed subject matter with prior art. The current examiner withdraws previously 35 USC 101 rejection due to the current amendment; and maintains the obvious rejections on 35 USC 103(a). The examiner regrets for any inconvenience any delays of communications.

#### ***Drawings***

4. The submitted drawings are acceptable for examining purposes.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

**5. Claims 1-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pauly (6,571,171) in view of Onken et al (6,163,744), further in view of Tang et al (6,134,500).**

a. As per claim 1-2, 4, 15-16, and 18, Pauly teaches:

- generating an aircraft routing proposal based on information describing a possible flight of an aircraft (abstract);
- determining a proposed flight assignment for the aircraft based on the generated aircraft routing proposal and complying with the information describing the possible flight of the aircraft (abstract). Pauly does not teach:
  - determining whether the proposed flight assignment meets a decision criterion describing requirements for aircraft routing; - if the decision criterion is unmet, optimizing the proposed flight assignment such that the proposed -flight assignment meets the decision criterion; and
  - generating a flight assignment plan using the proposed flight assignment that meets the decision

However, Onken teaches:

- determining whether the proposed flight assignment meets a decision criterion describing requirements for aircraft routing (see Onken, col.3, lines 22-37);

- if the decision criterion is unmet, optimizing/refining a proposed flight assignment such that the proposed flight assignment meets the decision criterion (see Onken, col.3, lines 30-37); and
- generating a flight assignment plan using the proposed flight assignment that meets the decision (column 4, lines 57-59).

Neither Pauly nor Onken expressly disclose about determination of a proposed pre-flight assignment – the examiner submits that they inherently suggests about “determination of a proposed flight assignment”/flight planning.

Tang also suggests about “determination of a proposed flight assignment”/flight planning (see Tang et al., col. 1, lines 58-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Pauly, Onken et al., and Tang et al in order to automatically correct a change in flight-relevant parameters and avoid any problem for flight planning in advance by utilizing an FMS.

- b. As per claims 5 and 19, both Pauly and Onken also teach information describing the possible flight of the aircraft includes at least one of flight information, aircraft information and maintenance information. (see Pauly, col. 3, or Onken, the abstract).
- c. As per claims 6 and 20, Onken also teaches flight information includes a destination (see Onken, col. 5, lines 36-55).
- d. As per claims 7-9, and 21-23, it would have been obvious to one of ordinary skills in the art at the time the invention was made to (requested by FAX to enhance safety) that the navigation/maintenance data in any aircraft includes current location, remaining flight

time, ready time, start time, end time and other kind of information (see Onken, col. 4, lines 50-65).

e. As per claims 9 and 23, Onken teaches when approaching an airport, a pilot is instructed to fly a particular heading that deviates from a programmed flight path (see Onken, col. 5, lines 13-25).

It would have been obvious to one of skills in the art at the time this invention was made to recognize in cited prior art that any kind of communication regarding the flight is done through a network, because a network is considered as a communication means that comprises at least two nodes (such as a transmitter and a receiver).

The examiner also submits that the claimed concept only about generating different information (non-functional descriptive material). However these differences (if there is any) are only found in the non-functional descriptive material and are not functionally involved in the steps recited. Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, see *In re Gulack*, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); *In re Lowry*, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Pauly, Onken et al , and Tang et al in order to generating information having any type of content. Because such data does not functionally relate to the steps in the method/system claimed and because the subjective interpretation of the information/data does not patentably distinguish the claimed invention.

**6. Claims 3, 10-13, 17, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pauly (US Pat. 6,571,171) in view of Onken et al (US Pat. 6,163,744) as applied to claim 1 above, and further in view of Nobe et al (US Pat. 5,657,231).**

a. As per claims 10 and 24, neither Pauly nor Onken expressly disclose the use of a shortest path algorithm.

However, Nobe teaches that in column 2, lines 6-9.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine Pauly, Onken et al., and Nobe et al.'s inventions in order to efficiently guide a vehicle to proposed destination on the basis of the automatically set shortest route for reducing related expenses.

b. As per claims 3, 11-13, 17, and 25-27: Neither Pauly nor Onken expressly disclose the use of a Dijkstra algorithm

Nobe et al. further suggest utilizing the Dijkstra algorithm (see Nobe et al., col. 2, lines 6-9).

It would have been obvious to one of ordinary skill in the art at the time of invention to use a "good/more advantageous" algorithm means (e.g., a revised simplex algorithm) that can implement a process as Nobe et al. in combination with Pauly, and Onken et al., in order to improve calculations, and giving more accuracy of proposed routes.

**7. Claims 14 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pauly (US Pat. 6,571,17 1) in view of Onken et al (US Pat. 6,163,744) as applied to claim 1 above, and further in view of Zweben et al (US Pat. 6,216,109).**

Pauly and Onken et al. do not expressly teach the branch and bound method to make a plan.

However, Zweben et al. teach about using that in column 4, lines 1-3.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to combine Pauly, Onken et al, and Zweben et al. in order to satisfy certain required conditions for scheduled set of activities for a close prediction.

**8. Claims 29-37, and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aslin (US Pat. 4,943,919) in view of Onken et al (US Pat. 6,163,744).**

a. As per claims 29-31, and 34-37 Aslin suggests about receiving information (non-functional descriptive material as discussed in rejections of above claims 9, and 23 ) describing a possible flight of an aircraft, wherein the information includes maintenance and operational constraints (the LRU fault data is considered to be the operational constraint) (see Aslin, the abstract); generating a flight network from the received information (see Aslin, col. 11, figures 1 and 2); modeling at least one of the maintenance and operational constraints (see Aslin, col. 12, lines 33-49 please note that maintenance and operational constraints may include “swapping criterion constraint”).

Aslin does not expressly disclose about determining an aircraft routing proposal for the aircraft that satisfies the received information.

However, Onken teaches about determining a proposal for an aircraft according to schedules (see Onken, col. 4, lines 47-55).



Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Aslin, and Onken et al in order to automatically correct a change in the flight-relevant parameters and avoid any incident.

b. As per claims 32 and 38, it would have been obvious to one of ordinary skill in the art at the time of invention was made from recognizing in cited prior art that a result of modeling/simulation is to provide a flying time constraint, because no one would take a chance to operate an aircraft without verifying that it is in conditions to flight to a destination according to a required schedule. The motivation for this is to verify that everything is in order to avoid a possibility of an accident.

c. As per claims 33-34, and 39-40, Aslin also suggests about generating scheduled maintenance check/test constraints (e.g., check/test schedules - see Aslin, col. 1, lines 20-25).

### *Conclusions*

9. The arguments are unpersuasive. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CUONG H. NGUYEN whose telephone number is 571-272-6759. The examiner can normally be reached on 9:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, THOMAS G. BLACK can be reached on 571-272-6956. The Rightfax number for the organization where this application is assigned is 571-273-6759.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Please provide support, with page and line numbers, for any amended or new claim in an effort to help advance prosecution; otherwise any new claim language that is introduced in an amended or new claim may be considered as new matter, especially if the Application is a Jumbo Application.

  
CUONG H. NGUYEN  
Primary Examiner  
Art Unit 3661